

PATENT SPECIFICATION



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408,856

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COMPLETE SPECIFICATION.

Improvements in and relating to Inhalers.

We, (Mrs.) WIETSKÉ VAN SETERS-BOSCH, a Dutch subject, of 78, Scheveningscheweg, The Hague, Holland, and HENRY FRANKEMÖLLER, a German citizen, of 158, Regentesselaan, The Hague, Holland, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The invention relates to an inhaler.

Inhalers are already known according to which the material to be inhaled is introduced into the nose or mouth of the person to be treated.

Suggestions have been made previously to provide an inhaler with a casing, adapted to receive a sponge or other fabric saturated with a medicament, from one side of which project spaced nose tubes for placing in the nostrils of a patient, whilst around the container, between the nose tubes there is fitted a ring to which is attached a mouth pipe which when moved into a position substantially at right angles to the nose tubes is brought into communication with a hole into the container so that air may be blown from the mouth through the medicament into the nostrils of a patient, or when the nose tubes are not in the nostrils air may be drawn through these tubes and the medicament into the mouth. Suggestions have also been made to provide a mouth piece at one end of a breathing chamber to the other end of which are connected nozzles for insertion in the nostrils. It has also been suggested in connection with respirators to draw the air through a chamber containing baffles and provided at one end with an air inlet covered with a filter of canvas or the like and at the other end with tubes fitted with valves and adapted to be fitted into the mouth and nostrils.

The invention relates to an inhaler which may be manufactured at a low price, which may very easily be transported, as it may be placed in a pocket and consequently may be used at any desired place, and which, notwithstanding these facts, is very efficient in operation. Moreover, with the inhaler according to

[Price 1/-]

the invention the material to be inhaled can be introduced both into the nose and the mouth of the person to be treated, while the inhaling is carried out with a minimum of trouble to the patient.

The inhaler according to the invention is characterised by a tank containing the material to be inhaled, this tank communicating directly with the atmosphere through openings at the bottom thereof, whilst at the top of the tank is provided a removable piece of tubing having four openings therein, which communicate respectively with the interior of the tank, with two removable flexible tubes each provided at their ends with a nozzle of such a shape that same may be placed with a close-fit in the nostril of a patient, and with a removable flattened tube for placing in the mouth of the patient, the arrangement being such that the whole apparatus may be carried by the nose and/or the mouth of the patient.

After use this inhaler may be placed into a small box which is preferably closed by a cover. This small box may be placed in the pocket so that the apparatus is ready for use at any moment and at any place.

The invention will now be described with reference to the accompanying drawings.

Fig. 1 shows a vertical section of the inhaler according to the invention.

Fig. 2 is a view of the small tube adapted to be placed in the mouth in plan and front elevation.

Fig. 3 shows the inhaler after being enclosed in a small box.

In Fig. 1, 1 is a tank, which is filled with the material to be inhaled. Preferably cotton-wool soaked with this material is used, but it will be understood that the tank may also be filled with the material to be inhaled in a solid form. The tank 1 is provided with apertures at the bottom by which the tank communicates with the atmosphere. On the tank 1 is provided a cover 2 fitted with a small tube 3. A removable piece of tubing 4 is pinched on the tube 3, this piece 4 communicating with the two small removable tubes 5 and 6 of rubber. The

small tubes 5 and 6 are provided with nozzles 7 and 8, which are shaped to conform with the shape of the nostrils. The removable small tube for the mouth is indicated at 9. This small tube is flattened, as shown in Fig. 2.

In the drawing the cover 2 is fitted over the tank 1, but it will be understood that the cover 2 may also be screwed to the tank 1. Similarly the piece of tubing 4 may be screwed on the small tube 3. If, for the purpose of using the apparatus, the nozzles 7 and 8 are inserted into both nostrils and the small tube 9 into the mouth and the person inhales, air is drawn in from the atmosphere and flows through the apertures at the bottom of the tank 1. The air then flows through the tank and, saturated with the material to be inhaled, enters the nose and the mouth of the person through the small tubes, 5, 6 and 9. The shape of the nozzles 7 and 8 and the small tube 9 is such as to ensure that all the air, which enters the nose and the mouth, is compelled to flow through the tank 1. The apparatus is so small and light that it may be carried entirely by the nose and/or the mouth; consequently the patient may use his hands for other purposes and may take up any desired attitude.

Instead of inhaling through the mouth and nose, it is also possible only to inhale through the mouth. For this purpose the piece of tubing 4 and the small tubes 5 and 6 are removed from the small tube 3 and the small tube 9 is fitted on the tube 3. The tube 9 is then placed into the mouth.

The inhaler according to the invention may be manufactured of any suitable material. Suitable materials for this purpose are for example the materials sold under the registered trade marks "Bakelite," and "Galalith," celluloid, aluminium and glass.

Where the inhaler is placed into a

small box, as illustrated in Fig. 3, the nozzles 7 and 8 lie against one another which is rendered possible by the provision of the small flexible tubes 5 and 6. The small tube 9 is for this purpose removed from the piece of tubing 4 and placed separately in the small box. This box is preferably closed by a cover in order to avoid penetration of dirt and the evaporation of the material to be inhaled.

Having now particularly described and ascertained the nature of our said invention, and in what manner the same is to be performed, we declare that what we claim is:—

1. Inhaler, characterised by a tank containing the material to be inhaled, this tank communicating directly with the atmosphere through openings at the bottom thereof, whilst at the top of the tank is provided a removable piece of tubing having four openings therein which communicate respectively with the interior of the tank, with two removable flexible tubes each provided at their ends with a nozzle of such a shape that it may be placed with a close-fit in the nostrils of a patient, and with a removable flattened tube for placing in the mouth of the patient, the arrangement being such that the whole apparatus may be carried by the nose and/or the mouth of the patient.

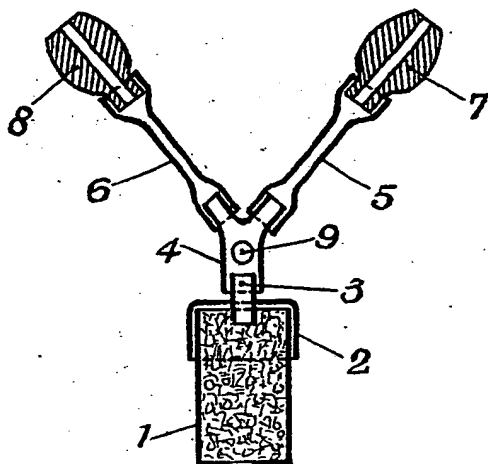
2. Inhaler according to claim 1, arranged in a small box, which is preferably closed by a cover.

3. Inhaler constructed, arranged and adapted for use as a whole, substantially as described with reference to the accompanying drawings.

Dated the 14th day of August, 1933.

For the Applicants,

GEORGE HAM & Co.,
Chartered Patent Agents,
93-94, Chancery Lane, London,
W.C.2.

Fig:1.*Fig:2.**Fig:3.*

[This Drawing is a full-size reproduction of the Original.]

streicht dabei über die im Einsatz 4 angeordneten Heilstoffe, sättigt sich dabei und überträgt dann den Heilstoff mit der eingeatmeten Luft auf die innern Nasenwandungen, so daß der Heilstoff sich dort niederschlagen und wirken kann. Für verschiedene Riech- und Heilstoffe können mehrere auswechselbare Einsätze vorgesehen sein. Die Heilstoffe können aber auch in solchen Quantitäten eingesetzt werden, daß sie rasch verbraucht und ersetzt werden können. Über die Düsen 2, 3 ist bei Nichtgebrauch ein Deckel 7 gestülpt, um den Zutritt von Unreinigkeiten zum Heilmittel zu verhindern.

Mittels der Vorrichtung gemäß Fig. 4 kann flüssiges Heilmittel unter leichtem Überdruck in die Nasenöffnungen gestäubt werden. In einer Flasche 10 ist der Heilstoff untergebracht. Mittels eines Gummiballes 11 kann Flüssigkeit aus der Flasche 10 angesaugt, zerstäubt durch einen Schlauch 12 in den Düsenkörper 13 übergeführt werden, aus welchem sie durch die Düsen 2, 3 auf die Naseninnenwandung geführt wird. Statt Heilmittel könnte auch Riechstoff oder Wasser usw. in feiner Verteilung eingeführt werden. Der Behälter 1 bis 4 kann z. B. aus Glas, Kunststoff, Holz, Porzellan hergestellt sein. Die Düsen 2, 3 könnten in bezug aufeinander verschiebbar im Teil 1 angeordnet sein. Das Zuleitungsstück könnte auch mit einem Pfropfen versehen sein, um direkt auf eine Flasche mit Heilmittel oder Riechstoff aufgesetzt zu werden. Die Luftlöcher 6 können auch regelbar ausgebildet werden, so daß die Öffnungen mehr oder weniger geschlossen werden können.

Bei der in Fig. 5 dargestellten Variante sind die beiden Düsen 2, 3 des Zuleitungsstückes um einen Stift 14 schwenkbar in bezug aufeinander angeordnet, im übrigen aber gleich ausgebildet wie bei der Ausführungsform gemäß Fig. 1. Die Verschwenk-

barkeit erlaubt das gegenseitige Einstellen der Düsen 2, 3, so daß ihr Abstand den gegebenen Verhältnissen angepaßt werden kann. Bei dieser Ausführungsform sind die Teile des Zuleitungsstückes 1 mit lösbaren Abschlußkappen 15 versehen, welche die Körper 16 tragen. Diese bestehen wiederum aus einem Heilstoff oder sind mit einem solchen imprägniert. Auch bei dieser Ausführungsform sind am Zuleitungsstück Löcher 6 vorgesehen, die den Eintritt der Luft ermöglichen.

Dadurch, daß die Kappen 15 zusammen mit den Körpern 16 vom Zuleitungsstück 1 entfernbar sind, können sie auch einzeln verwendet werden, beispielsweise kann der in Fig. 5 rechts dargestellte Stift zum Einreiben verwendet werden, während der spitze Stift links in Fig. 5 beispielsweise zur Behandlung von Mückenstichen verwendet werden kann.

PATENTANSPRUCH:

Vorrichtung zum Einführen von Heilstoffen und Riechstoffen in die Nasenöffnungen, gekennzeichnet durch ein mit zwei zum Einführen in die Nasenöffnungen bestimmten Düsen versehenes Zuleitungsstück.

UNTERANSPRÜCHE:

1. Vorrichtung nach Patentanspruch, dadurch gekennzeichnet, daß das Zuleitungsstück, dessen Düsen die Nasenöffnungen nach außen abschließen sollen, als lösbarer Teil eines Behälters für Heilstoff und Riechstoffe ausgebildet ist.

2. Vorrichtung nach Patentanspruch und Unteranspruch 1, gekennzeichnet durch mehrere auswechselbare Behälter.

3. Vorrichtung nach Patentanspruch, dadurch gekennzeichnet, daß das Zuleitungsstück an einen Zerstäuber angeschlossen ist.

Anton Albert Bischoff.

Vertreter: Fritz Isler, Zürich.

Fig. 1



Fig. 5

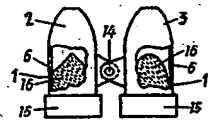


Fig. 3

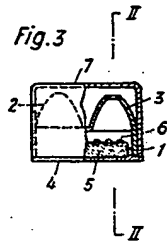


Fig. 2

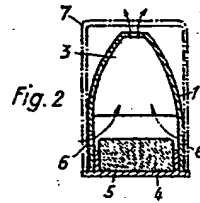
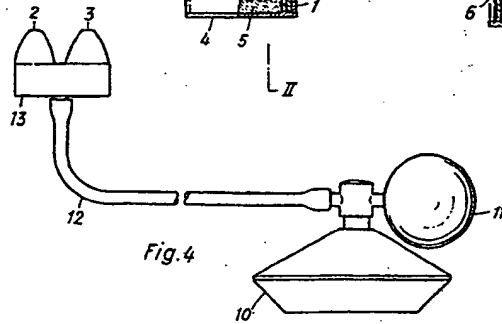


Fig. 4



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